

Title	A uniform treatment of the (r)eba-conditional morpheme and the imperative morpheme in Japanese
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Citation	言語文化共同研究プロジェクト. 2019 p.51-p.60
Issue Date	2020-07-31
oaire:version	VoR
URL	https://doi.org/10.18910/76968
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A uniform treatment of the *(r)eba*-conditional morpheme and the imperative morpheme in Japanese[†]

Yuya Noguchi

1. Introduction

In Japanese, conditionals are created by appending a conditional morpheme to a verb stem. Among several kinds of conditionals in Japanese, in this paper we focus on conditionals such as in (1), which we refer to as *(r)eba*-conditionals, given the morpheme attached to a verb stem, namely *-(r)eba*.

- (1) (Mosi) Taroo-ga {paatii-ni ik-eba / gomi-o sute-reba} Hanako-wa yorokobu.
if Taro-Nom party-to go-if trash-Acc discard-if Hanako-Top is.pleased
'If Taro {goes to the party / throw away the trash}, Hanako will be pleased.'

There are two allomorphs of this conditional morpheme, which we refer to as *(r)eba*-conditional morpheme: *-eba* and *-reba*. The generalization is that *-eba* is used when a verb stem to which that morpheme is attached has a consonant as its final phoneme (e.g., *ik-* 'go' in (1)) while *-reba* is chosen when that morpheme follows a verb stem which ends with a vowel (e.g., *sute-* 'discard' in (1)).

On the other hand, Japanese has an imperative morpheme, and attaching it to a verb stem makes a sentence an imperative, as shown in (2).

- (2) a. Paatii-ni ik-e!
party-to go-Imp
'Go to the party!'
b. Gomi-o sute-ro!
trash-Acc discard-Imp
'Throw away the trash!'

As in the case of the *(r)eba*-conditional morpheme, there are two allomorphs of the imperative morpheme: *-e* and *-ro*. *-e* appears when that morpheme is appended to a consonant-final verb stem (e.g., *ik-* 'go' in (2a)), while *-ro* is realized when it follows a vowel-final verb stem (e.g., *sute-* 'discard' in (2b)).

Note here that in the both morphemes the phoneme /r/ is employed (i.e., *-reba* in (1) and *-ro* in (2b))

[†] The content of this paper is based on the presentation at *Morphology* (LING6210) at University of Connecticut in Spring 2019. I thank Andrea Calabrese and the audience for helpful comments. All remaining errors are, of course, my own.

(3) a. paatii-ni ik-u
party-to go-Pres
'go to the party'

b. gomi-o sute-ru
trash-Acc discard-Pres
'throw away the trash'

We here repeat the two morphemes below:

- Observing (4), we can extract a common element from the two morphemes, namely /e/. The question that arises now is whether we can treat this element /e/ as a common exponent between the two morphemes. Note that this research question does not appear to be so implausible, if we take into account the fact that imperative sentences can function as a conditional in English when they are followed by a conjunction *and* or *or*, as exhibited in (5).

- Another data relevant to the current question has to do with a dialectal difference of the realization of the

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imperative morpheme. In some dialects of Japanese, including Hokkaido dialect and Ogasawara Islands (or Bonin Islands) dialect (Abe 2001), the imperative morpheme is realized as $-(r)e$, rather than $-(r)o$, even when it follows a vowel-final verb stem, as shown in (6). Note that this realization is impossible in the standard Japanese.²

- (6) Gomi-o sute-re! [acceptable in some dialects in Japanese]
trash-Acc discard-Imp
‘Throw away the trash!’

A plausible explanation for such a dialectal difference is that the underlying form of the imperative morpheme is $-e$ and that there exists a rule in the standard Japanese, but not in dialects where (6) is allowed, which turns that form into $-(r)o$. Given this approach, it is reasonably considered that Japanese has the morpheme $-e$, which is used commonly in the $(r)eba$ -conditional morpheme and the imperative morpheme, and that morpheme can be turned into $-(r)o$ by some morpho-phonological rule which should be based on the structure of imperatives.

Against that background, in this paper we aim to pursue the possibility that the $(r)eba$ -conditional morpheme and the imperative morpheme in Japanese are treated in a uniform manner. Specifically, we claim that the common exponent $-e$ is treated as the head of TP with the irrealis feature (cf. Tagawa 2009, Sato 2011, Nishiyama 2012) and that one of the imperatives allomorphs, namely $-(r)o$, is obtained by a certain morpho-phonological rule.

This paper is organized as follows: in order to establish the basis of the proposal in this paper, Section 2 and 3 provide an overview of previous research which presents the syntactic and morphological analysis of $(r)eba$ -conditionals and imperatives in Japanese, respectively. Based on insights obtained from these analyses, in Section 4 we provide our proposal concerning the possible uniform treatment of the $(r)eba$ -conditional morpheme and the imperative morpheme. Section 5 summarizes the paper.

2. Previous Morphological/Syntactic Research on $(r)eba$ -conditionals

This paper adopts the view provided by Sato (2011) and Nishiyama (2012) on the segmentation of $-(r)eba$ and the clause size of $(r)eba$ -conditionals. They argue that (i) $-(r)eba$ is bimorphemic and (ii) $(r)eba$ -conditionals are larger than vP , i.e., TP/CP. In the following, we lay out an overview of their arguments.

First, Sato (2011) and Nishiyama (2012) contend that $-(r)eba$ can be broken up into the two smaller morphemes, namely $-(r)e$ and $-ba$, as opposed to the claim by Bloch (1946) and Mihara (2012) that $-(r)eba$

² According to my intuition, even though the standard Japanese speakers can recognize that the sentence in (6) is an imperative, they must feel that it is merely a slip of the tongue of the speaker or that the speaker foolishly utters the imperative. Notice, however, that speakers of some dialects which allow (6) do not feel so and naturally interpret the sentence in (6) as an imperative.

can no longer be decomposed.³ One of the arguments of the bimorphemic view on *-(r)eba* is Sato's (2011) observation that the latter syllable of *-(r)eba*, namely *-ba*, can follow other conditional morphemes in Japanese, such as *-tara* 'if' and *-nara* 'if', as shown in (7).⁴

- (7) Siken-ga {owar-e *(-ba) / owat-tara(-ba) / owat-ta-nara(-ba)}, Mariko-wa ryokoo-ni
 exam-Nom finish-e-if finish-if-if finish-Past-if-if Mariko-Top travel-to
 ik-u daroo.
 go-Pres will
 'If(/When) the exam has finished, Mariko will travel.' (cf. Sato 2011: 159-160)

This observation straightforwardly indicates that *-ba* independently functions as a (bound) morpheme. It is hence reasonable to consider that the *(r)eba*-conditional morpheme *-(r)eba* is bimorphemic, namely that it can be dismantled into the two parts: *-(r)e* and *-ba*.

In addition, the bimorphemic view on *-(r)eba* leads Sato and Nishiyama to treat the two morphemes *-(r)e* and *-ba* as the head of TP and CP, respectively, as shown in (8).⁵ This claim is plausible if we take into account the fact that the morpheme sequence *-(r)e-ba* follows a verb stem, as well as the basic syntactic hierarchical order "CP>TP>VP".

- (8) [CP [TP [_{VP} ... (V-)v] (r)e] ba]

To confirm that *(r)eba*-conditionals include TP in their structure, as in (8), Nishiyama (2012) provides an example in (9), which crucially contains a temporal adverb *rainen-no haru* 'next spring'.

- (9) [Rainen-no haru siken-ni ukar-e-ba], yo-nen-go-ni-wa hatarak-e-ru.
 next.year-Gen spring exam-to pass-e-if 4-year-later-in-Top work-can-Pres
 'If I pass the entrance exam next spring, I will be able to work in four years.'
 (cf. Nishiyama 2012: 158)

If we adopt an arguable assumption that a temporal adverb is licensed by the head of TP (see also Kishimoto 2010), the grammaticality of (9) indicates that TP is contained in the structure of *(r)eba*-

³ Bloch (1946) and Mihara (2012) seem to take the monomorphemic view on *-(r)eba* for granted without any argument, for the purpose of the goal of their paper.

⁴ It is an open question here why the attachment of *-ba* to *-tara* and *-nara* is optional as shown in (7), which is irrelevant to the discussion here.

⁵ With his monomorphemic view on *-(r)eba*, Mihara (2012) claims that *-(r)eba* takes VP as its complement, even though he does not clarify what the syntactic category of *-(r)eba* is. See also fn.6.

conditionals.⁶

3. Previous Research of the Imperative Morpheme

This section gives an overview of previous research of the imperative morpheme in Japanese. To our best knowledge, Tagawa (2009) is the only work which analyzes the imperative morpheme, under the framework of Distributed Morphology (DM, henceforth) (cf. Halle & Marantz 1993). For this reason, in this paper we rely on his analysis of Japanese imperative morpheme.

Tagawa (2009) proposes that imperatives have the structure in (10).

- (10) [ForceP [M(odal)P [FinP [TP [VP V[+V]] T[-Past]] Fin[+Irrealis]] M[+Imp]] Force[+Direct]]
(p) irrealis update plan set instruction
sentence radical speech act (Tagawa 2009: 82)

His proposal of (10) significantly relies on Han's (1999) proposal of the semantics of imperatives, which is displayed in (11).⁷

- (11) Logical form of imperatives:
directive(irrealis(p))
 a. *irrelais(p)*: a set of hypothetical possible worlds in which *p* is satisfied.
 b. *directive* (force-indicating operator): instruction to the hearer to add *p* to his or her plan set.
 (cf. *ibid*: 81; Han 1999: 109)

Tagawa contends that the “directive” operator shown in (11b) can be further decomposed into two components, as shown below:

⁶ Mihara (2012) also realizes that a temporal adverb can be placed within a (*r*)*eba*-conditional as in (9). Unlike Nishiyama's assumption, however, he points out that a temporal adverb can be contained even within a vP-size clause, such as a clause headed by *-nagara* 'while', as shown in (i), and thus maintains that it does not serve as a diagnostic for the existence of TP.

(i) Taroo-wa [[_{VP} Hanako-o kinoo-no niji-goro mati]-nagara] pan-o tabeta.
Taro-Top Hanako-Acc yesterday-Gen 2.o'clock-around wait-while bread-Acc ate
'Taro ate bread while waiting for Hanako around two yesterday.'
(cf. Mihara 2012: 122)

(i), however, does not sound completely grammatical to us. Furthermore, even if it is assumed as acceptable, there is no reason to analyze the sentence as in (ii), where the temporal adverb *niji-goro* ‘around 2 o’clock’ is originated in the matrix clause, rather than in the embedded one, and the object in the *nagara*-clause *Hanako-o* is scrambled across the temporal adverb to the matrix clause.

(ii) Taro-wa Hanako-o_i kinoo-no nijī-goro [t_i mati-nagara] pan-o tabeta.

This observation thus makes his argumet dubious. We do not further discuss this point for want of space.

⁷ “Plan set” in (11b) is defined as below: “a set of propositions that specifies the intentions to bring about a certain state of affairs” (Han 1999: 101).

- (12) *directive* \rightarrow a + b
- a. instruction (to the hearer): direction speech act
 - b. adding *p* to hearer's plan set: imperative sentence radical (ibid: 81)

According to him, the semantics of imperatives consists of the three components: (11a), (12a) and (12b). His proposal of the structure of imperatives (10) is based on this semantic composition: (11a), (12b) and (12a) correspond to $\text{Fin}_{[+\text{Irrealis}]}$, $\text{M}_{[+\text{Imp}]}$ and $\text{Force}_{[+\text{Direct}]}$ in the structure of (10), respectively.

On the basis of the structure in (10), he proposes a rule of realizing the imperative morpheme under a DM approach, which is exhibited in (13).^{8,9,10}

- (13) $\{\text{V}_{[+\text{V}]}, \text{Fin}_{[+\text{Irrealis}]}, \text{M}_{[+\text{Imp}]}\} \leftrightarrow$ Add /e/ to a consonant-final V and /o/ to a vowel-final V. (cf. ibid: 84)

4. Toward a Uniform Treatment of *-e*

Based on the overview of the relevant previous research in Section 2 and 3, we now provide the possibility of dealing with the *(r)eba*-conditional morpheme and the imperative morpheme in a uniform manner. Recall that the research question posed in Section 1 arises from the comparison between the two morphemes shown in (14), which is the modified version of (4).

- (14) a. *(r)eba*-conditional morpheme: *-(r)e-ba*
 b. imperative morpheme: *-e*, *-(r)o* (or *-(r)e* in some dialects)

We can extract *-e* as a common exponent from the two morphemes shown in (14). This observation thus brings about the possibility of unifying the two morphemes.

We now propose the possible uniform analysis of the two morphemes, based on insights provided by Sato (2011), Nishiyama (2012) (see Section 2) and Tagawa (2009) (see Section 3). Specifically, we claim that the common exponent *-e* is treated as the head of T with the irrealis feature, and propose the vocabulary insertion rule in (15a). Furthermore, we contend that one allomorph of the imperative morpheme, namely *-(r)o*, is realized by a morpho-phonological rule in (15b), given the observation that it has to do not only with phonology in that it is obtained when following a vowel-final verb, but also with morphology/syntax

⁸ Notice that according to the rule (13), $\text{Force}_{[+\text{Direct}]}$ in (10) is not required to realize the imperative morpheme. One argument for this proposal is that in Japanese an imperative can be embedded as an indirect quotation (see, e.g., Kuno 1988), which arguably does not contain any element related to speech acts.

⁹ As we assume in this paper, Tagawa (2009) also assumes that /r/ is later inserted between a vowel-final verb stem and the imperative morpheme /o/ by a phonological rule, realizing the imperative morpheme as /ro/.

¹⁰ Despite of his assumption of the DM approach, Tagawa (2009) does not seem to make clear distinction between rules in vocabulary insertion from morpho-phonological rules.

in that it is a morpheme unique to imperatives.¹¹ (15b) roughly states that /e/ is turned into /o/ when it is placed after a vowel-ending morpheme and before the head of M(odal)P with [+Imp] (see Section 3).¹²

- (15) a. $T_{[+Irrealis]} \leftrightarrow /e/$
 b. $/e/ \text{ (in (15a))} \rightarrow /o/ : V] \text{ ___ } M_{[+Imp]}$

How do the two rules generate the morphemes shown in (14)? Here we adopt the structure for (*r*)*eba*-conditionals proposed in Sato (2011) and Nishiyama (2012), which is shown in (8), and further assume that the head of TP in the structure of (*r*)*eba*-conditionals is furnished with the irrealis feature, given that the event described within a conditional clause is an unrealized one. Specifically, we assume the structure in (16) for (*r*)*eba*-conditionals.¹³

- (16) $[CP [TP [vP \dots (V-)v] T_{[+Irrealis]}] C_{[+Cond(itional)}]]$

After the structure in (16) is created in the syntax component, /e/ is inserted as a tense morpheme in the morphology component, by virtue of the rule in (15a). The additional rule in (15b) is irrelevant here, because $M_{[+Imp]}$ is not involved in the structure. The realization of the (*r*)*eba*-conditional morpheme can thus be explained with our proposal in (15) (plus the phonological rule of /r/-insertion (see Section 1) and /ba/-insertion to $C_{[+Cond]}$ (see fn.13)).

The realization of the imperative morpheme can also be accounted for by the proposed rule in (15). We here assume the syntactic structure proposed by Tagawa (2009) in (10), with the proviso that the irrealis feature, which he encodes in the head of FinP, lies in the head of TP.¹⁴ Under this assumption, the rule in

¹¹ Nishiyama (1998) also analyzes /o/ as an imperative morpheme modified by a readjustment rule with its base form /e/. Given that, our proposal here can be regarded as a refined version of his analysis.

¹² Given the fact that all the vowel-final verb stems in Japanese have either /i/ or /e/ as its final phoneme, it might be possible to present a more detailed rule in (i) as an alternative to (15b).

(i)
$$\begin{array}{c} \left[\begin{array}{l} -\text{consonant} \\ +\text{sonorant} \\ -\text{high} \\ -\text{low} \end{array} \right] \rightarrow \begin{array}{c} [+back] \\ | \\ [+Irrealis] \end{array} / \left[\begin{array}{l} -\text{consonant} \\ +\text{sonorant} \\ -\text{back} \end{array} \right]] \text{ ___ } M_{[+Imp]} \\ | \\ [+Irrealis] \end{array}$$

This formalization is conjectured as more economical than (15b), in that the former uses more specific features. We appreciate Andrea Calabrese for pointing out this possibility.

¹³ We further stipulate that the head of CP in (*r*)*eba*-conditionals is furnished with [+Cond(itional)], which is phonologically realized as /ba/.

¹⁴ If we keep Tagawa's (2009) proposal that [+Irrealis] is contained in the head of FinP, the rule in (15a) can be modified as in (i). It is an open question which rule is more plausible.

(i) $T_{[-Past]}, \text{Fin}_{[+Irrealis]} \leftrightarrow /e/$

(15a) realizes $T_{[+Irrelais]}$ in the structure of imperatives as /e/ in the morphology component. In case the verb stem ends with a vowel, the morpho-phonological rule in (15b) turns /e/ realized by (15a) into /o/. Recall here that in some Japanese dialects the imperative morpheme is realized as $-(r)e$, rather than $-(r)o$, even when it is attached to a vowel-final verb, as shown in (6). Our proposal gives an account for this dialectal property if we assume that those dialects do not have the morpho-phonological rule in (15b), which leads the imperative morpheme to be necessarily realized as $-(r)e$.

Therefore, with the rules in (15), we can deal with the $(r)eba$ -conditional morpheme and the imperative morpheme in a uniform manner, under the DM approach. Below we provide one consequence obtained based on our proposal, regarding the fact that in Japanese clauses where an adjective is followed by the (purported) imperative morpheme function as a subordinate clause corresponding to adverbial *whether*-clauses in English. A relevant example is shown below:

- (17) [Hawai-ga atuk(u)ar-e samuk(u)ar-e], umi-ni-wa ik-u tumorida.
 Hawaii-Nom be.hot-Imp be.cold-Imp sea-to-Top go-Pres be.going.to
 ‘Whether it is hot or cold in Hawaii, I am going to go to sea (there).’

In (17), the subordinate clause where the adjective is directly followed by the morpheme $-e$ is interpreted as is a corresponding *whether*-clause in English, as indicated in the translation. In fact, some previous studies assume that the morpheme attached to the adjective in (17), namely $-e$, is the imperative morpheme (e.g., Kitazaki 2016).¹⁵ It is obvious, however, that the subordinate clause in (17) does not have the

¹⁵ Nishiyama (1999) proposes a fine-grained morphology of Japanese adjectives, as shown below:

- (i) a. Atukat-ta.
 hot-Past
 ‘It was hot.’
 b. [TP [VP [Pred(icate)P [AP [A atu]] [Pred k]] [V ar]] [T ta]] (*k*: predicative copular, *ar*: dummy copula)

Note that *ar* can be used not only as the dummy copula as in (i) but as a main verb (which means ‘be’ or ‘exist’), and that in the latter case, $ar-e$ is no doubt accepted as an imperative form of the main verb *ar*. Given that, it is plausible that an adjective conjugated with $-e$, such as *atuk(u)ar-e* in (17), is regarded as an imperative form.

Notice also, however, that the situation becomes more complicated when the conjugation of an adjective in a $(r)eba$ -conditional clause is taken into account; the dummy copula of an adjective in the conditional is realized as *er*, rather than as *ar*, as below:

- (ii) [Hawai-ga atuker-e ba], zettai umi-ni ik-oo.
 Hawaii-Nom hot-e if absolutely sea-to go-let’s
 ‘If it is hot in Hawaii, let us go to the sea absolutely.’

The adjective followed by $-e$ in (ii) differs from that in (17), in that the former is further followed by a conditional conjunction $-ba$. This observation suggests the possibility that the allomorph of the dummy copula, namely *er*, is realized by a rule whose contextual condition contains $C_{[+Cond]}$ (see (16)). One of the difficulties in assuming this possible analysis is that the dummy copula and the conditional conjunction is not in a local relation, with the head of TP intervening between them. A possible solution for this problem is to assume that Fusion (cf. Bobaljik 2015, Calabrese 2019) is applied to the dummy copula and the head of TP, which makes local the positional relation between the dummy copula and the conditional conjunction. A detailed investigation of this issue is a future task. See Nishiyama (1999) for another possible analysis for this morphological change,

directive nuance which we canonically obtain by uttering an imperative. Given that $M_{[+Imp]}$ in (10) contributes to the directive nuance at least partly (see (12b)), then it will be difficult to account for the meaning of the subordinate clause in (17) if we adopt Tagawa's (2009) realization rule for the imperative morpheme shown in (13), which contains $M_{[+Imp]}$. This concern does not arise, however, if we adopt our proposal. Notice that we do not contain $M_{[+Imp]}$ in the condition for realizing the imperative morpheme, or /e/, as shown in (15a). On the other hand, to assume that the subordinate clause in (17) carries in its structure $T_{[+Irrealis]}$, which is a prerequisite for realizing /e/ according to the proposed rule in (15a), is not implausible, given that the event expressed within that clause is construed as unrealized. Hence, our proposal should be helpful in analyzing /e/-headed *weather*-clauses such as in (17), although a detailed syntactic and semantic analysis for such clauses remains to be investigated.

5. Conclusion

This paper pursued a uniform treatment of the two morphemes, based on the observation that a common exponent *-e* can be extracted from the (*r*)*eba*-conditional morpheme and the imperative morpheme. Specifically, relying on insights obtained from the analyses by Tagawa (2009), Sato (2011) and Nishiyama (2012), we proposed that /e/ is the realization of the head of TP with the irrealis feature (see (15a)), which accounts for the distribution of the two morphemes, with the morpho-phonological rule that turns /e/ into /o/ in a certain environment where $M_{[+Imp]}$ is involved (see (15b)).

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which takes into account the historical morphological change of (*r*)*eba*-conditionals.

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